



CIVIL-TECH CONSULTANTS AND ENGINEERS

Building & Highway Material Testing Laboratory
NABL - Accredited Laboratory as per ISO / IEC-17025 :2005



Job No.: CTCE/BBMP/W.No.03/GVG/CSR-02/10806/CEMENT/2015-16

Date: 25.02.2016

TEST REPORT ON CEMENT

* CUSTOMER	:	Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.
* AGENCY	:	Mr. G. Venkategowda, 13 th A Cross Road, Yelahanka Upanagara, Bangalore – 64.
* NAME OF THE WORK	:	Developmental works new Vivekananda Park, Yelahanka 4 th Phase & SFS 707 in Attur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.
* REFERENCE	:	BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016
SAMPLE ID	:	Cement
SAMPLE RECEIVED ON	:	24.02.2016
PERIOD OF TESTING	:	24.02.2016 to 25.02.2016

The results of the tests conducted on the cement sample are as follows:

Sl. No	Descriptions	Test Method as per IS	Test Result	Requirements as per IS: 8112-2013
1	Standard Consistency	IS-4031 (Part -4) 1988(RA-2009)	28.00 %	-
2	a) Initial Setting Time	IS-4031 (Part -5) 1988(RA-2009)	150 Minutes	Not Less than 30 Minutes
	b) Final Setting Time	IS-4031 (Part -5) 1988(RA-2009)	475 Minutes	Not More than 600 Minutes
3	Soundness by Le Chatelier Method	IS-4031 (Part-3) 1988(RA-2009)	1 mm	Not more than 10mm

*Information is furnished by the Customer/Representative.

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Job No.: CTCE/BBMP/W.No.03/GVG/CSR-02/1080f/SAND-Gradation/2015-16

: 25.02.2016

TEST REPORT ON DETERMINATION GRADATION OF FINE AGGREGATES

* **Customer** : Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.

* **Agency** : Mr. G. Venkategowda,
13th A Cross Road, Yelahanka Upanagara, Bangalore - 64.

* **Name of Work** : Developmental works new Vivekananda Park, Yelahanka 4th Phase & SFS 707 in Attur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016

Technical Reference : IS : 2386 Part 1 - 1963 RA-2007

Sample ID : Fine Aggregates

Sample Received on : 24.02.2016

Date of Testing : 25.02.2016

Total Wt. of Aggregates in gms 1000

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)			
		Zone-I	Zone-II	Zone-III	Zone-IV
10	100	100	100	100	100
4.75	92.65	90-100	90-100	90-100	95-100
2.36	73.20	60-95	75-100	85-100	95-100
1.18	50.56	30-70	55-90	75-100	90-100
600 Micron	24.69	15-34	35-59	60-79	80-100
300 Micron	14.06	5-20	8-30	12-40	15-50
150 Micron	6.54	0-10	0-10	0-10	0-15

* Information is furnished by the Customer/Representative.

Remarks : This sample is under Zone-I specific limits.

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Portecy AE
B.N. Dhanraj



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Job No.: CTCE/BBMP/W.No.03/GVG/CSR-02/1080f/AGG/GR/2015-16

25.02.2016

TEST REPORT ON DETERMINATION GRADATION OF COARSE AGGREGATES

* Customer : Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.
* Agency : Mr. G. Venkategowda,
13th A Cross Road, Yelahanka Upanagara, Bangalore - 64.
* Name of Work : Developmental works new Vivekananda Park, Yelahanka 4th Phase & SFS 707 in Attur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.
Reference : BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016
Technical Reference : IS : 2386 Part 1 -1963 RA-2007
Sample ID : Coarse Aggregates (40mm)
Sample Received on : 24.02.2016
Date of Testing : 25.02.2016

Total Wt. of Aggregates in gms= 10000

Is Sieve Size in mm	Cumulative Weight Passing in %	Specific Limits as per IS 383-1970 (RA- 2007)	
		Graded	Single Sized
80	100	100	-
63	100	-	100
40	96.44	95-100	85-100
20	39.57	30-70	0-20
10	14.68	10-35	0-5
4.75	2.08	0-5	-

* Information is furnished by the Customer/Representative

Remarks : This sample is under Graded specific limits.

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Job No.: CTCE/BBMP/W.No.03/GVG/STEEL/2015-16

25.02.2016

TEST REPORT ON REINFORCEMENT STEEL

Client : Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.

Agency : Mr. G. Venkategowda,
13th A Cross Road, Yelahanka Upanagara,
Bangalore - 64.

Name of the work : Developmental works new Vivekananda Park,
Yelahanka 4th Phase & SFS 707 in Attur Ward No. 03,
Yelahanka New Town Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016

Date of Test : 25.02.2016

Technical Reference : IS: 1786-2008

Sl. No	Nominal size (dia) (mm)	Mass per metre (Kg/mtr)	TENSILE STRENGTH			Bend Test	Rebend Test
			0.20% proof stress/Yield stress N/mm ²	Tensile strength (Ultimate stress) N/mm ²	Elongation percent gauge length		
1	16	1.58	520	563	13.60	O.K	O.K

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Pradeep AE

30.02.2016

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Lab No.: CTCE/BBMP/W.No.03/GVG/CSR-02/1080f/CUBE/2015-16

26.03.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*Customer : Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.

*Agency : Mr. G. Venkategowda,
13th A Cross Road, Yelahanka Upanagara, Bangalore - 64.

*Name of the work : Developmental works new Vivekananda Park, Yelahanka 4th Phase & SFS 707 in Attur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016

*Sample ID : RCC Raft Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*Grade of Concrete : M₃₅

Compressive Strength as on : 28th day

Sample Received on : 26.03.2016

Sl.No.	*Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)
1	27.02.2016	26.03.2016	8.247	814.6	36.20
2	27.02.2016	26.03.2016	8.362	824.7	36.65
3	27.02.2016	26.03.2016	8.475	836.2	37.16

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CHWANAATH, L.A.
of Executive Officer



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NABL - Accredited Laboratory as per ISO / IEC-17025 :2005



Job No.: CTCE/BBMP/W.No.03/GVG/CSR-02/1080f/CUBE/2015-16

07.04.2016

TEST REPORT ON COMPRESSIVE STRENGTH OF CONCRETE CUBES

*Customer : Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.

*Agency : Mr. G. Venkategowda,
13th A Cross Road, Yelahanka Upanagara, Bangalore - 64.

*Name of the work : Developmental works new Vivekananda Park, Yelahanka 4th Phase & SFS 707 in Attur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016

*Sample ID : RCC Roof Slab Concrete

Size of cubes : 150mmx150mmx150mm

Cross Sectional Area : 22500 mm²

Technical Reference : IS: 516-1959 (Reaffirmed 2008)

*Grade of Concrete : M₃₅

Compressive Strength as on : 28th day

Sample Received on : 07.04.2016

Sl.No.	*Date of casting	Date of testing	Weight of cube (Kg)	Failure load (KN)	Compressive strength (N/mm ²)
1	10.03.2016	07.04.2016	8.364	833.2	37.03
2	10.03.2016	07.04.2016	8.275	819.5	36.42
3	10.03.2016	07.04.2016	8.452	845.6	37.58

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VISHWANATH I.A.
Executive Officer

Pradeep AE

B.N. Pradeep

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Job No: CTCE/BBMP/W.No.03/GVG/WMM/Gradation/2015-16

14.03.2016

GRADATION FOR WMM MORTH TABLE-400-11

Customer : Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.

Agency : Mr. G. Venkategowda,
13th A Cross Road, Yelahanka Upanagara, Bangalore - 64.

Name of Work : Developmental works new Vivekananda Park, Yelahanka 4th Phase & SFS 707 in Attur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.

Reference : BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016

Date of Testing : 14.03.2016

Material : WMM

Sample Location : WMM Mix Plant

Oven Dry Wt (gm): 8270

Is Sieve Size in mm	Weight Retained (gm)	Cumulative Weight Retained (gm)	Cumulative % of Retained	Cumulative % of Passing	Spec.Limits
53	0	0	0	100	100
45	265	265	3.2	96.8	95-100
22.4	2240	2505	30.3	69.7	60-80
11.2	1185	3690	44.6	55.4	40-60
4.75	1515	5205	62.9	37.1	25-40
2.36	975	6180	74.7	25.3	15-30
0.600	745	6925	83.7	16.3	8-22
0.075	855	7780	94.1	5.9	0-8

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Job No.: CTCE/BBMP/W.No.03/GVG/WMM/AIV/2015-16

14.03.2016

Aggregate Impact Value

IS: 2386 Part IV

Customer	Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.
Agency	Mr. G. Venkategowda, 13th A Cross Road, Yelahanka Upanagara, Bangalore - 64.
Name of the Work	Developmental works new Vivekananda Park, Yelahanka 4th Phase & SFS 707 in Attur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016
Source / Location	WMM Plant
Type of Mix	Wet Mix macadam
Date of Testing	14.03.2016

Sl No.	Details	Trial No.		Average
		1	2	
1	Total weight of aggregate sample filling the cylindrical measure = W_1 g	387	389	22.68
2	Weight of aggregate passing 2.36 mm sieve after the test = W_2 g	87	89	
3	Weight of aggregate retained 2.36 mm sieve after the test = W_3 g	300	300	
4	Aggregate Impact value = percent fines	22.48	22.88	
	$100 * (W_2/W_1) \%$			22.68

Comments:

→ Maximum allowable Aggregate Impact value for Wet mix Macadam is 30%

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Job No: CTCI/BBMP/W.No.03/GVG/WM/S-T/2015-16

14.03.2016

DETERMINATION OF FLAKINESS INDEX & ELONGATION INDEX OF COARSE AGGREGATES

Customer	Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.
Agency	Mr. G. Venkategowda, 13th A Cross Road, Yelahanka Upanagara, Bangalore - 64.
Name of Work	Developmental works new Vivekananda Park, Yelahanka 4th Phase & SFS-707 in Artur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.
Reference	BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016
Technical Reference	IS 2386(Part I) 1963 (RA 2011)
Type of Mix	Wet Mix Macadam
Date of Testing	14.03.2016



Result : Flakiness Index = 11.64%

Elongation Index = 13.29%

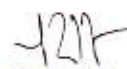
Result : Combined Flakiness & Elongation index 24.93%

Comments:

Maximum allowable Flakiness & Elongation Index for Wet Mix Macadam is 30%

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Lab No: CTCE/BBMP/W.No.03/GVG/BC/Bitumen/2015-16

18.03.2016

BITUMEN CONTENT DETERMINATION OF BITUMINOUS CONCRETE MIX

As per IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.
AGENCY	Mr. G. Venkategowda, 13th A Cross Road, Yelahanka Upanagara, Bangalore - 64.
NAME OF THE WORK	Developmental works new Vivekananda Park, Yelahanka 4th Phase & SFS 707 in Attur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016
SAMPLE I/D	Roads near Vivekananda Park, Ward No. 03
DATE OF TESTING	18.03.2016

BITUMEN CONTENT DETERMINATION

Description	Trail 1	Trail 2
1. Weight of Mixture before Test, g	500	500
2. Weight of Mixture after Test, g	473.5	474
3. Weight of Asphalt and Mineral matter Extracted, g	-	-
4. Weight of Mineral Matter, g.	-	-
5. Weight of Ash, g		
6. Weight of Bitumen Extracted, g. (corrected)	26.5	26.00
7. Bitumen content in %	5.30	5.20
8. Average	5.25	

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Job No: CTCE/BBMP/W.No.03/GVG/BC/Bitumen/2015-16

18.03.2016

BITUMEN CONTENT AFTER GRADATION DETERMINATION OF BITUMINOUS CONCRETE MIX

As Per IS 2386 and IRC:SP:11-1984

CLIENT	Asst. Executive Engineer, Yelahanka New Town Sub Division, BBMP, Bangalore.
AGENCY	Mr. G. Venkategowda, 13th A Cross Road, Yelahanka Upanagara, Bangalore - 64.
NAME OF THE WORK	Developmental works new Vivekananda Park, Yelahanka 4th Phase & SFS 707 in Attur Ward No. 03, Yelahanka New Town Sub Division, BBMP, Bangalore.
REFERENCE	BBMP/AEE/YNSD/ /2015-16 Dated: 24.02.2016
SAMPLE I/D	Roads near Vivekananda Park, Ward No. 03
DATE OF TESTING	18.03.2016

GRADATION AFTER EXTRACTION

Sieve Size in mm	Trail 1				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	45.36	9.58	9.58	90.42	79-100
9.5	37.42	7.90	17.48	82.52	70-88
4.75	62.58	13.22	30.70	69.30	53-71
2.36	64.23	13.56	44.26	55.74	42-58
1.18	55.69	11.76	56.03	43.97	34-48
0.6	59.43	12.55	68.58	31.42	26-38
0.3	43.26	9.14	77.71	22.29	18-28
0.15	32.65	6.90	84.61	15.39	12-20
0.075	40.63	8.58	93.19	6.81	4-10

Sieve Size in mm	Trail 2				Specified Limits as per MORTH specification table 500-18 (Grading-2)
	Weight Retained, gm	% Retained	%Cummulative Retained	% Passing	
19	0	0	0	100	100
13.2	33.74	7.12	7.12	92.88	79-100
9.5	45.69	9.64	16.76	83.24	70-88
4.75	72.51	15.30	32.05	67.95	53-71
2.36	66.43	14.01	46.07	53.93	42-58
1.18	69.63	14.69	60.76	39.24	34-48
0.6	43.58	9.19	69.95	30.05	26-38
0.3	39.87	8.41	78.36	21.64	18-28
0.15	32.45	6.85	85.21	14.79	12-20
0.075	38.47	8.12	93.33	6.67	4-10

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